

REMARKS

Request for Continued Examination

The present Reply is being filed together with a Request for Continued Examination. See MPEP § 1452.

Form of Claim Amendments

Pursuant to the Examiner's earlier request, the applicants include a complete listing of the claims above. Further, as required by 37 C.F.R. §§ 1.173(d), the markings to the claims showing changes are relative to the earlier issued patent. To comply with 37 C.F.R. § 1.173(b)(2), the applicants have used the suggested language "amended," "twice amended," where appropriate. As used above, a previously presented new claim is indicated as "previously added," and "once amended" if it has been subsequently amended.

Claim Status

Claims 1-19, 22-27, 29-33, 35, 36, and 117-120 are pending. Claims 20, 21, and 34 are withdrawn as allegedly directed to a non-elected species. Claims 28, 37-116 and 121-131 have been canceled, without prejudice, as allegedly directed to a non-elected species. The applicants intend to pursue the canceled subject matter in a divisional application.

The pending independent claims are claims 1, 12, and 25.

Independent claim 1 has been amended to move "toothbrush" from the preamble to the body of the claim to clarify that the term specifies claimed structure. Claim 1 has also been amended to replace "the other tuft(s) of bristles" with "one another and any other rotatable tooth cleaning element on the toothbrush head." Support for this amendment is clear from the figures and the overall context of the original patent (see, e.g., col. 1, lines 26-35; col. 1, lines 55-58; col. 2, lines 34-36; and Figures 1-3.) Independent claims 12 and 25 have also been amended slightly to replace "other tooth cleaning element(s) on the toothbrush head" with "other rotatable tooth cleaning element(s) on the toothbrush head."

Claims 2-11 have been amended to be consistent with claim 1.

Reissue Declaration

Claims 12-27, 29-84 and 96-131 were rejected as being based upon a defective reissue declaration under 35 U.S.C. 251. See 37 C.F.R. 1.175. The applicants traverse.

As noted in MPEP 1402,

The most common bases for filing a reissue application are:
(A) the claims are too narrow or too broad;

The reissue declaration specified that

Through error, the claims in the issued patent did not include claims of the scope now being presented in the reissue application.

One error was that, all of the claims of the issued patent recite a handle. However, the specification describes an invention that relates more broadly to tooth cleaning elements extending from a toothbrush head.

and the applicants added new claims that did not require "a handle." For example, claim 1, as issued, read

1. A toothbrush comprising:
a handle;
a head extending from the handle; and
a plurality of tufts of bristles extending from the head, each tuft of bristles being supported for rotation about only one axis, each tuft of bristles being rotatable independent of the other tuft(s) of bristles. (emphasis added)

and claim 12, as added in the preliminary amendment, read

12. Apparatus comprising:
a toothbrush head; and
a first group of tooth cleaning elements extending from the head and a second group of a plurality of tooth cleaning elements extending from the head,
the elements within each of the groups being of a common type and the type of elements in the first group being different than the type of elements in the second group, and
wherein each of the elements of the first group is nonrotatable, and each of the elements in the second group is supported for rotation about only one axis and independently rotatable with respect to one another.

Thus, as recited in the reissue declaration, the added claims are broader in some respects than the claims that had previously issued, at least in so far as the added claims do not require a handle. Accordingly, the applicants ask the examiner to withdraw the rejection of claims 12-27, 29-84 and 96-131 as being based upon a defective reissue declaration.

Species Election

The applicants confirm our previous election of Species 1 corresponding to Figs. 2 and 3. The applicants do not concede that the characterizations of the office action dated December 2,

2008 regarding which claims read on Species 1 are correct. However, in the interest of expediting prosecution, the applicants cancel claims 37-84, 96-116, and 121-131, without prejudice, as allegedly directed to a non-elected species. The applicants intend to pursue the canceled subject matter in a divisional reissue application.

Claim Rejections

Independent claim 1

Claims 1, 5, 8, 9 and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Japan Pub. No. JP 5-76416 ("JP '416"). Claims 2-4, 6, 7, and 117-120 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '416, alone or in view of DE 198 17 704 ("DE '704"); U.S. Pat. No. 5,896,614 ("Flewitt"); U.S. Pat. No. 2,263,802 ("Grusin"); and/or U.S. Pat. No. 2,486,847 ("Hokett"). The applicants traverse.

Claim 1, as amended, recites "a plurality of tufts of bristles extending from the head, each tuft of bristles being supported for rotation about only one axis, each tuft of bristles being rotatable independent of one another and any other rotatable tooth cleaning element on the toothbrush head." In the rejection of claim 12, the examiner acknowledges that JP '416 does not describe "each element in the second group being independently rotatable with respect to one another and any other tooth cleaning element on the toothbrush head."¹ Accordingly, JP '416 does not anticipate claim 1.

The examiner has not presented the basis of a prima facie case of obviousness of claim 1. A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.² In particular, a case of obviousness is not established by picking and choosing among the individual elements of prior art references to recreate the claimed invention.³ The Supreme Court cautioned that "A fact finder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning."⁴ Accordingly,

¹ Office action dated December 2, 2008, page 9.

² See *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 1731 (2007).

³ See *Smithkline Diagnostics, Inc. v. Helena Laboratories Corp.*, 859 F.2d 878, 889, 8 USPQ2d 1468, 1477 (Fed. Cir. 1988); see also *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600 ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.").

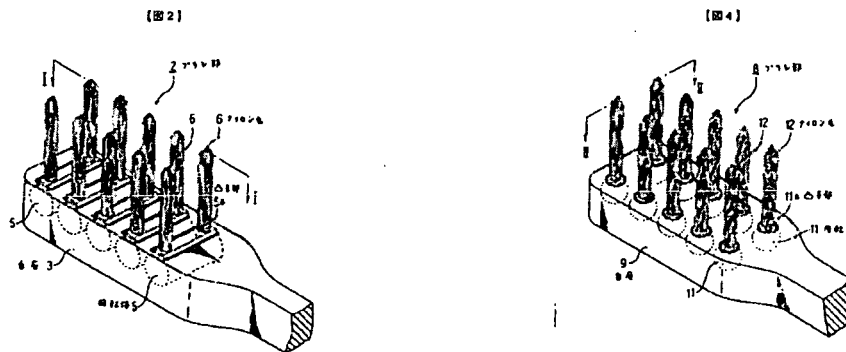
⁴ *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1742.

Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.⁵

Thus, rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.⁶

No articulated reasoning with a rational underpinning has been presented as to why a person of ordinary skill would modify the toothbrushes described by JP '416 to provide a toothbrush with "a plurality of tufts of bristles extending from the head, each tuft of bristles being supported for rotation about only one axis, each tuft of bristles being rotatable independent of one another and any other tooth cleaning element on the toothbrush head" (claim 1, as amended).

Figure 2 (reproduced below) of JP '416 shows each tuft of bristles paired with a second tuft of bristles on a common cylindrical rotation element. Figure 4 (reproduced below) of JP '416 shows individual tufts of bristles on ball-shaped rotation elements.



With respect to claim 12, the examiner suggests that

one of ordinary skill in the art would find it obvious to modify the Japan '416 embodiment shown in Figs. 1, 2 and 3 such that there is only a single bristle tuft (instead of two bristle tufts as shown in Fig. 2) on the pivoting structure 5 as suggested in the Figs. 4, 5 and 6 embodiment to simply vary the general brushing and/or interproximal capabilities and/or

⁵ *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 1742 (2007).

⁶ *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed.2006) cited with approval in *KSR International Co. v. Teleflex Inc. et al.*, 127 S.Ct. 1727 at 1740.

brushing surface area of the toothbrush. Further, one of ordinary skill in the art would find it obvious to simply increase or decrease the number of bristle tufts on the pivoting structure 5 of the toothbrush in order to yield optimal, desired brushing characteristics and depending on the particular brushing operation at hand.⁷

However, the suggested modification of simply reducing the number of bristle tufts on the cylinder 5 such that each bristle tuft rotates independently of any other tooth cleaning element on the toothbrush head would reduce the bristle density on the toothbrush shown in Figure 2 of JP '416 by 50%. A person of ordinary skill in the art would not have reasonably expected this modification to "to yield optimal, desired brushing characteristics" as suggested by the examiner but rather would expect the modification to render the toothbrush unsatisfactory for its intended purpose. Accordingly, there is no suggestion or motivation to make the proposed modification.⁸ Moreover, a person aware of JP '416 who desired to provide tuft bristles that rotate independently would have no reason to modify the toothbrush shown in Figure 2 of JP '416 but rather would just use the toothbrush shown in Figure 4 of JP '416. The conclusory statements made by the examiner cannot sustain rejections on obviousness grounds in the absence of articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.⁹

The applicants note that JP '416 has been available since 1993 but the applicants were the first to recognize that

By having each tooth cleaning element supported for rotation about only one axis, the problems mentioned above for the ball and socket tuft support are avoided. That is, the chances are increased that the tooth cleaning element will remain in contact with teeth during brushing and the brush will be more attractive in appearance.

Further, as each tooth cleaning element is rotatable independent of the other tooth cleaning element(s), the problem discussed above with the first Japanese embodiment is avoided. Each tooth cleaning element can achieve optimal interdental penetration without interference from rotation by another tooth cleaning element.¹⁰

The applicants then conducted experiments that confirmed

The interproximal residence time of elements 16 is significantly increased as compared to elements 14 which are rigidly fixed to head 12. An experiment was conducted in which the

⁷ Office action dated December 2, 2008, page 9.

⁸ See MPEP 2143.02 citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

⁹ See *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727 at 1740 (2007) citing *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" – emphasis added).

¹⁰ U.S. Pat. No. 6,553,604, col. 1, line 59 – col. 2, line 3.

interproximal residence time was determined for fixed tufts at both a 0 degree (like element 14) and 16 degree forward angle, and for rotating tufts such as element 16. The tufts had an average of 40 bristles each with each bristle having a 7-mil diameter. Residence times were measured on a Single Filament Tester (SF1) with a load of 4 g/tuft at 50 velocities between 0.5 and 10 in/s.¹¹

The examiner has not shown that a person of ordinary skill in the art would have recognized the advantages of combining these features at the time of the invention. Thus, only impermissible hindsight reconstruction would provide a basis for the proposed modification of JP '416.

However, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.¹²

Accordingly, the applicants ask the examiner to withdraw the rejections.

Claims 1, 2, 8, 10 and 11 were also rejected under 35 U.S.C. § 102(b) as being anticipated by or under 35 U.S.C. § 103(a) as being unpatentable over DE 1 210 409 ("DE '409"). The applicants traverse.

The action seems to suggest that the "toothbrush" recited in the preamble is merely a statement of intended use and therefore not entitled to patentable weight. The applicants disagree. The preamble is directed to structure – a toothbrush –, not an intended use. However, in the interest of expediting prosecution, the applicants amend claim 1 to recite "a toothbrush" in the body of the claim to clarify that it specifies claimed structure. Every limitation positively recited in a patent application claim must be given effect in order to determine what subject matter that claim defines.¹³ Accordingly, the feature that the claimed apparatus comprises "a toothbrush" must be given patentable weight. The action all but concedes that what is disclosed in DE '409 is not a toothbrush. The figures in DE '409 (which is in German) seem to disclose some type of conveyor belt with a plurality of brushing elements. Accordingly, claim 1 distinguishes DE '409 for at least the reason that claim 1 is directed to a toothbrush.

The applicants recognize that, during examination, the pending claims must be given their broadest interpretation so as to reduce the possibility that the claims, once issued, will be

¹¹ U.S. Pat. No. 6,553,604, col. 2, lines 40-50.

¹² *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600. See also *KSR International Co. v. Teleflex Inc. et al.*, 127 S.Ct. 1727 at 1742 ("A fact finder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.")

¹³ See *In re Wilder*, 57 C.C.P.A. 1314, 1318 (1970).

interpreted more broadly than is justified.¹⁴ However, this interpretation must also be reasonable and consistent with Applicants' specification.¹⁵ The PTO must apply to the pending claims the broadest reasonable interpretation that is consistent with the interpretation that those skilled in the art would reach, "taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification" and the disclosure from analogous arts using the same claim term.¹⁶

The applicants submit that a person of ordinary skill in the art would not interpret "a toothbrush" as reading on what appears to be a conveyor belt supporting a brush. Thus, the language of claim 1 structurally distinguishes DE '409.

The applicants also traverse the examiner's assertion that

There is nothing to prevent a user from utilizing the Germany '409 apparatus as a "toothbrush" for a human or any other small or large-sized living creature, for that matter.¹⁷

There is no indication that the apparatus shown in DE '409 would fit into a person's mouth. Moreover, the examiner's interpretation appears to imply that a person of ordinary skill in the art would interpret a push broom for sweeping driveways as "a toothbrush" because the push broom might be used by a zookeeper for cleaning the teeth of a hippopotamus. The applicants submit that this interpretation is not reasonable and consistent with Applicants' specification nor with the disclosure from analogous arts using the same claim term.

Claim 1 also distinguishes DE '409 because it recites "a *plurality* of tufts of bristles extending from the head" (emphasis added.) In contrast, element 2 in DE '409, which the action alleges as corresponding to the claimed head, only has a single tuft extending from it. The other two tufts extend from *different* elements 2' and 2, each of which extend separately from base 1, which the action alleges corresponds to the claimed handle. Thus, DE '409 fails to disclose a head extending from a handle and having a plurality of tufts of bristles extending there from the head, as required by claim 1. In response to our previous presentation of these arguments, the examiner asserts that the

¹⁴ See MPEP 2111.

¹⁵ See *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005).

¹⁶ See MPEP 2111 citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) and *In re Corright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)

¹⁷ Office action dated December 2, 2008, pages 19 and 20.

head could be a portion element 1 (Fig. 2) and the "handle" could be any distal end thereof (i.e., of element 1) which can be gripped or handled by a user.

The applicants submit that a person of ordinary skill in the art would not interpret a toothbrush handle as reading on what appears to be a conveyor belt supporting a brush simply because the conveyor belt can be gripped or handled.

Accordingly, the applicants ask the examiner to withdraw the rejections of claim 1.

The applicants submit the claims that depend from claim 1 distinguish the cited prior art for at least the same reasons as those set forth above for independent claim 1.

Independent claim 12

Claims 12-19 and 22-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP '416 in view of DE '704. The applicants traverse.

For at least reasons analogous to the reasons discussed with respect to claim 1, no articulated reasoning with a rational underpinning has been presented as to why a person of ordinary skill would modify the toothbrushes described by JP '416 to provide a toothbrush head with a second group of a plurality of tooth cleaning elements extending from the head in which "each of the elements in the second group is supported for rotation about only one axis and independently rotatable with respect to one another and any other rotatable tooth cleaning element on the toothbrush head" (claim 12).

Furthermore, the examiner acknowledges that Japan '416 does not disclose "a "first group" of tooth cleaning elements extending from the head and wherein each of the elements of the first group is nonrotatable."¹⁸ The examiner asserts that

DE '704 discloses in Figs. 1 and 2 a toothbrush comprising a "first group" of tooth cleaning elements 8, 8 extending from the head and wherein each of the elements of the "first group" is nonrotatable. It would have been obvious to one of ordinary skill in the art to have provided the Japan '416 toothbrush with a "first group" of tooth cleaning elements extending from the head and wherein each of the elements of the first group is nonrotatable as taught by DE 704 to increase the overall brushing effectiveness and overall brushing surface area of the toothbrush. In the modified Japan '416 toothbrush, the elements within each of the groups are of a common "type" and the "type" of elements in the first group (i.e., size wise) being different from the "type" of elements in the second group (i.e., size wise).¹⁹

¹⁸ Office action dated December 2, 2008, page 9.

¹⁹ Office action dated December 2, 2008, pages 9-10.

However, the action does not point to any indication in the cited references or in the office action that would lead a person of ordinary skill in the art to expect that the proposed modification would “increase the overall brushing effectiveness and overall brushing surface area of the toothbrush” described in JP ‘416. Rather than presenting articulated reasoning with a rational underpinning as to why a person of ordinary skill would modify the toothbrushes described by JP ‘416 with features of DE ‘704, the examiner is simply stating the general goal that underlies most, if not all, modifications to toothbrush designs. If such a general goal sufficed as a reason to combine references, most, if not all, improvements to existing devices would not be patentable because, as noted by the Supreme Court

inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.²⁰

For at least these reasons, the conclusory statements made by the examiner do not provide the articulated reasoning with some rational underpinning to support the legal conclusion of obviousness and cannot sustain rejections on obviousness grounds.²¹

Moreover, neither JP ‘416 nor DE ‘704 describe “the type of elements in the first group being different from the type of elements in the second group.” The action asserts that this limitation is met simply by the rotatable tufts in DE ‘704 being a different size than the non-rotatable tufts. However, the applicants submit that this broad construction is improper and the applicants ask the examiner to withdraw the rejection, as both JP ‘416 and DE ‘704 plainly show tooth cleaning elements all of the same type – i.e., every tooth cleaning element in JP ‘416 and in DE ‘704 is a tuft of bristles.

For at least these reasons, the applicants ask the examiner to withdraw the rejections of claim 12.

The applicants submit the claims that depend from claim 12 distinguish the cited prior art for at least the same reasons as those set forth above for independent claim 12.

Furthermore, the dependent claims include features which further distinguish the cited references. For example, claim 118 recites that “the type of elements in the first group is

²⁰ *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 127 S.Ct. 1727, 1742 (2007).

²¹ See, e.g., *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741-42 (2007) citing *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed.2006).

compositionally different from the type of elements in the second group.” Claims 118 and 119 were rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '416 in view of DE 704, and further in view of U.S. Pat. No. 5,896,614 (“Flewitt”). The office action asserts that

It would have been obvious to one of ordinary skill in the art to have provided the modified Japan '416 apparatus with a type of elements in a first group being structurally and compositionally different from the type of elements in a second group as suggested by Flewitt to increase the overall brushing and/or massaging effectiveness of the toothbrush apparatus.²²

The applicants respectfully submit that the proposed, multiple-step modification of JP '416 is beyond any modification that would reasonably occur to one of ordinary skill in this art, and could only have been obtained through a detailed analysis of the applicants' disclosure and claims.²³ Moreover, the action provides no rational basis for the propose modification other than the overbroad goal of increasing overall brushing effectiveness. To the contrary, in some situations, replacing one type of brushing element with another type of brushing element may decrease brushing effectiveness in some aspects and yet improved them for others. The action provides no basis for why a person of skill in the art would consider the propose modification, let alone determine that the proposed modification would “increase the overall brushing and/or massaging effectiveness of the toothbrush apparatus.” For at least this reason, the proposed combination of references is inappropriate. Accordingly, the applicants request the withdrawal of the rejections of claims 118 and 119.

Independent claim 25

Claims 25-27, 29-32, 33, 35, and 36 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP '416 in view of DE '704, alone or further in view of Grusin or Hokett. the applicants traverse.

For at least reasons analogous to the reasons discussed with respect to claim 1, no articulated reasoning with a rational underpinning has been presented as to why a person of ordinary skill would modify the toothbrushes described by JP '416 to provide “a plurality of tufts

²² Office action dated December 2, 2008, page 14.

²³ One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention (See *In re Fine*, 837 F.2d at 1075, 5 USPQ2d at 1600). Similarly, the mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification (See *In re Gordon*, 221 U.S.P.Q. 1125, 1127).

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of bristles extending from [a toothbrush] head, each tuft of bristles being supported for rotation about only one axis, each tuft of bristles being rotatable independent of all other rotatable tuft(s) of bristles on the toothbrush head" (claim 25).

Furthermore, for at least reasons analogous to the reasons discussed with respect to claim 12, no articulated reasoning with a rational underpinning has been presented as to why a person of ordinary skill would modify the toothbrushes described by JP '416 with features of DE '704 to provide a toothbrush "including at least one tooth cleaning element which cannot be rotated" (claim 25).

For at least these reasons, the applicants ask the examiner to withdraw the rejections of claim 25.

The applicants submit the claims that depend from claim 25 distinguish the cited prior art for at least the same reasons as those set forth above for independent claim 25.

Conclusion

Please apply any charges or credits to deposit account 06-1050, referencing 00216-0638001.

Respectfully submitted,

Date: May 1, 2009

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